

U.S. Patent Application Serial No. 10/691,016
Reply to Office Action dated September 21, 2006

Remarks:

Applicants have read and considered the Office Action dated September 21, 2006 and the references cited therein. Claims 38, 42, 46, 47, 52, 54, 58, 63-66 and 83 have been amended. Claims 39-41, 43-45, 53, 59, 79-82 and 84 have been cancelled without prejudice or disclaimer. Claims 67-75 have been withdrawn. Claims 38, 42, 46-47, 51-52, 54, 58, 63-66 and 83 are currently pending. Reconsideration and reexamination are hereby requested.

In the Action, claims 38, 40-42, 83 and 84 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Green. In addition, claims 39, 43 and 44-46 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Green and further in view of Hiyama et al. Claims 47, 51, 52 and 58 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Green and further in view of Mead et al. Claims 53 and 59 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Green and Mead et al., and further in view of Hiyama. Claim 54 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Green and Mead et al., and further in view of Oldridge. Finally, claims 63-66 and 79-82 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brumat in view of Green and Mead et al, and further in view of Hiyama et al. Applicants respectfully traverse the rejections.

Claim 38 has been amended and recites a mechanized method for vineyard cultivation comprising mechanical pruning during a first period in the vineyard's dormant season using a first tool comprising a cutting tool as a mechanized pruner to remove a predetermined percentage of grapevine's canes and/or shoots. Claim 38 further recites shoot thinning to remove shoots below the grapevine's cordon and spaced apart from and above a base of the grapevine during a second different period in the vineyard's growing season using a second tool comprising a striking tool as a mechanized shoot thinner to remove a predetermined percentage of shoots. Claim 38 further recites fruit thinning during a third different period in the vineyard's growing season after shoot thinning using a mechanized fruit thinner to remove a predetermined

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percentage of fruit, wherein pruning, shoot thinning and fruit thinning are coordinated to achieve a predetermined node density and yield. Claim 38 recites harvesting using a mechanized harvester comprising a shaking tool, wherein the first tool, second tool, mechanized fruit thinner and mechanized harvester are mounted to a vehicle and configured for mechanized pruning, mechanized shoot thinning, mechanized fruit thinning, and mechanized harvesting respectively while the vehicle moves through the vineyard. Applicants respectfully assert that claim 38 patentably distinguishes over the cited references or any combination thereof. None of the cited references or their combination show the use of the various mechanized devices together.

Moreover, claim 38 recites that the mechanical pruning, mechanical shoot thing and mechanical fruit thinning are performed in a coordinated manner to achieve a predetermined node density and yield. Although the prior art shows mechanized agricultural devices, none show any sort of coordination of individual steps. Applicants further assert that the prior art does not teach or suggest combination of one specific device for use in a coordinated manner with any other steps. The prior art generally approaches mechanizing agriculture operations and mix such operations with cultivation operations done by hand. Pruning, shoot thinning and fruit thinning needs are different where mechanized operations are performed. The present invention provides improved vineyard cultivation as knowledge of each of the various mechanized operations and the effect on other mechanized operations and subsequent adjustment results in the yields and quality that are desired. Applicants further assert that the use of the mechanized pruning, mechanized shoot thinning, mechanized fruit thinning and mechanized harvesting using tools that are mounted to a vehicle and performed while the vehicle moves through the vineyard in addition to the coordination of the various steps, is neither shown nor suggested by the prior art or any combination thereof. The prior art only teaches individual agricultural devices but does not teach a coordinated mechanized method for vineyard cultivation. Applicants assert that the prior art is directed to various agriculture operations that cannot be used to coordinate the mechanized steps of the present invention. Although the Office Action contends that any agricultural operation may be mechanized, Applicants disagree. Mechanizing of each operation

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has an effect on the overall cultivation and this effect is not obvious and must be coordinated, as recited in claim 38, to achieve desired yield and fruit quality. Applicants assert that claim 38 patentably distinguishes over the prior art for at least these reasons.

Claim 83 also recites the same steps and method and recites the mechanized pruners, mechanized shoot thinners and mechanized fruit thinners are hand-held free. Applicants assert that the prior art does not teach or suggest such a mechanized method using such devices and coordination as the prior art shows some hand held devices that are not practical for vineyard cultivation. Applicants assert that claim 83 is also allowable for at least the same reasons as well as others.

Applicants assert that claims 42 and 46 recite particular cutting tools and striker elements for the mechanical pruner and mechanical shoot thinner. Claim 47 recites leafing removal coordinated with other mechanized operations. Applicants assert that the prior art fails to teach or suggest the coordination of all these mechanized steps to arrive at the predetermined density and yield. Applicants assert that claim 47 patentably distinguishes over the prior art for at least these reasons.

Claim 51 recites canopy adjustment on a single curtain trellis. Applicants assert that the prior art fails to teach or suggest the vineyard cultivation of claim 38 in coordinated combination with the canopy adjustment of claim 51 to provide an improved vineyard cultivation. Applicants assert that claim 51 is allowable for at least these reasons.

Claims 51, 58 and 63-66 recite mechanization method for grapes produced on particular trellises. In addition, the claims recite additional mechanized steps that are coordinated including opening centers with a mechanical slapper unit, keeping centers clean using a mechanical breaker unit, shoot positioning using a mechanical shoot positioner, leaf removal with a mechanized leaf removal machine, canopy removal with a mechanized slapper unit, early leaf removal with a mechanized leaf removal machine, pruning during a growth period with a mechanical pruner unit. These additional mechanized steps are coordinated with the other

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mechanized steps. Applicants assert that the prior art fails to teach coordination of each and every one of the steps recited in the claims for use for the particular trellis system. Applicants assert that it is not obvious for one of ordinary skill in the art to utilize and coordinate the various steps and decide which steps are appropriate for various trellis configurations without undue experimentation. Mechanization of vineyard cultivation has different effects on different trellis systems that may require further steps as recited in these claims and that are coordinated to arrive at desired density and yield. Applicants assert that the present invention provides for mechanizing the critical steps of vineyard cultivation to arrive at a predetermined density and yield.

Applicants assert that as each and every limitation of the claims is not shown or suggested by the prior art or combination thereof, a *prima facie* case of obviousness has not been established. Therefore, Applicants assert that the pending claims patentably distinguish over the prior art or any combination thereof.

Applicants assert that the claims patentably distinguish over the prior art and are in condition for allowance. Applicants request that the rejections over the prior art be withdrawn.

A speedy and favorable action in the form of a Notice of Allowance is hereby solicited. If the Examiner feels that a telephone interview may be helpful in this matter, please contact Applicant's representative at (612) 336-4728.



Respectfully submitted,

MERCHANT & GOULD P.C.

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GAS/km